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FACILITIES HISTORICAL REPORT
NEW RIVER ORDNANCE PLANT
OF
RADFORD ORDNANCE WORKS
QUARTER JULY 1 - SEPTEMBER 30, 1945Prepared by
HERCULES POWDER COMPANY
A. VAN BEEK, MANAGERSubmitted to
CAPTAIN GERALD M. MINNE', ORDNANCE DEPARTMENT
(ACTING) COMMANDING OFFICERRADFORD ORDNANCE WORKS
NEW RIVER ORDNANCE PLANT
RADFORD, VIRGINIA
OCTOBER 31, 1945

DG 156 - CHIEF OF ORDNANCE
Entry 646 Histories of Ordnance Facilities
and Activities, 1940-1945
Box A-132 - New River Ordnance Plant

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SCHEDULE II

Contractor Administration

1. Key Personnel

Schedule No. 5, showing key personnel as of September 30, 1945, may be found on pages 8 and 9.

2. Changes in Contract W-ORD-462, DA-W-ORD-26

Change Order No. 49 to Contract W-ORD-462, dated July 7, 1945, and accepted by the contractor August 10, 1945, was issued to authorize and direct the contractor to perform, on facilities already available at the New River Ordnance Plant, all work and services in connection with the manufacture of 995 fin assemblies, complete, for Shell HE, T3, 10" Mortar T29 or any of its components parts that may be scheduled by the Office of the Field Director of Ammunition Plants for performance at the New River Ordnance Plant, including without limitation 57,100 of Ignition Charges, T5, Assembly -Pc. Mk. 71-12-24A and 57,100 of Propelling Charge T3-Base and three increments for 10" Mortar T29 Assembly.

Change Order No. 51 to Contract W-ORD-462, dated July 13, 1945, and accepted by the contractor on July 17, 1945, was issued to authorize and direct the contractor to operate present facilities at the New River Ordnance Plant for the following:

(a) The production of Flash Reducers T2 for 155mm Propelling Charges for Howitzer M1, in such amounts as may be directed from time to time by the contracting officer and as are within the capacity of the plant.

(b) The production of Flash Reducers T3 for 8" propelling charges for Howitzer M1, in such amounts as may be directed from time to time by the contracting officer and as are within the capacity of the plant.

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(c) The production of Flash Reducers T⁴ for 105mm Propelling Charges for Howitzer M2, in such amounts as may be directed from time to time by the contracting officer and as are within the capacity of the plant.

(d) All production performed pursuant to the above authorizations shall be in conformance with drawings and specifications to be furnished to the contractor by the Government.

Change Order No. 52 to Contract W-ORD-462, dated July 24, 1945, and accepted by the contractor July 31, 1945, was issued to authorize (but not to obligate) the contractor, when requested or authorized by the contracting officer, to extend technical aid and any assistance (including the furnishing of necessary equipment, materials, and work forces) in connection with the moving, salvage, demolition, neutralization, or other disposition of Government-owned ammunition, explosives, or dangerous chemicals being transported or stored by a carrier.

Change Order No. 53 to Contract W-ORD-462, dated August 6, 1945 and accepted by the contractor August 10, 1945, was issued to authorize and to direct the contractor to perform on facilities already available at the New River Ordnance Plant all work and services necessary for the manufacture of the items enumerated below:

(1) 4,000 Bag Cartridges Base Zone 3 for 155mm Howitzer M41 Charge with loaded ignition. (TT35783, dated May 10, 1945);

(2) 3,000 Bag Cartridges Empty Increment Zone 4 for 155mm Howitzer M41 Charge. (TT38570, dated May 24, 1945);

(3) 500 sets, each consisting of empty cartridge bag base and 3 increments for 10" mortar shell (TT38768, dated May 25, 1945);

(4) 500 Ignition Charge Bags Pc.Mk. 71-12-24D loaded with Grade A-4

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Black Powder. (TT38768, dated May 25, 1945, as amplified by letter of July 14, 1945, from the commanding officer, File SPOCB 471.87/170-118);

(5) 400 empty cartridge bags, Increment Charge 3, with loaded ignition and 400 empty cartridge bags, Increment Charge 5, both for 155mm Howitzer M1 Charge M41. (Message Form SPOLY 457/54008, dated June 30, 1945, as amended by TT41342, dated July 5, 1945.)

Notice of termination of Contract W-ORD-462, dated August 29, 1945, and accepted by the contractor September 4, 1945, was issued to confirm previous notice that work under Contract No. W-ORD-462 was terminated for the convenience of the Government. Such termination was effective as of August 29, 1945. The contractor was requested to furnish promptly an estimate of the cost of the work to be done as a result of this termination. The fixed-fee for the contractor's services rendered as a result of this notice of termination will be negotiated after receipt of said estimate.

3. Industrial Relations

a. Labor Market

Because of production requirements, there was practically no demand for new employees at the New River Ordnance Plant during the quarter ending September 30, 1945. Production schedules had been reduced the first part of the quarter, and by the end of August, 1945, all production operations had ceased. As of September 30, 1945, there were only 265 hourly employees working at the New River Ordnance Plant.

b. Labor Relations

On July 5, 1945, Mr. W. C. Humphrey, field examiner of the National Labor Relations Board, conducted a meeting at the Radford Ordnance Works with representatives of the American Federation of Labor, the Congress of Industr-

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SCHEDULE III

Production

1. Production Schedules

For production schedules, see Industry Integration Schedule No. 9, pages 15 through 16.

2. Production Methods Practices and Techniques

All production operations at the New River Ordnance Plant were consolidated on a one-shift basis effective July 16, 1945. Effective September 2, 1945 the Plant adopted a forty-hour work-week.

On Line 1-A, on July 1, all powder was dumped from metal containers into fibre containers before going to the Operating Building. This was done to eliminate using the metal Navy container in the present-type dumping chute for safety and excess maintenance on the chutes. The same type of dumping was started on Line 1-B on July 16, when it was started back into production.

Steel drums for packing the 105mm Howitzer, M2, M2A1, were put into use on Line 3-A on July 25, 1945, in the Smokeless Area.

Three new pilot lots were loaded during the latter part of July; i.e., Flash Reducer T2 for 155mm Howitzer M1; Flash Reducer T3 for 8" Howitzer M1 and M2, and Flash Reducer T4 for 105mm Howitzer M2A1. In developing the bags for these new charges, the War Department asked that these bags be made from Grade "C" cotton. However, since both the T2 and T3 charges were a mixture of potassium sulphate and black powder, the potassium sulphate dusted out of this cloth too easily, and it was necessary to use Grade "B" cotton in making the bags for these two charges. The T4 Charge contained only black powder, and Grade "C" cotton was used for this bag. A "stick powder" container (M18) was used for packing these charges, and the flash reducers will be placed in

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scutan bags. In addition to the "data card" a "technical bulletin," giving necessary information regarding the use of the reducers, was placed in each container. Because of the low tolerances allowed, it was necessary to weigh each charge produced. Authorization was received from the War Department to allow adjustments on any T2 charges that were within .08 ounces of exact weight and any T3 charges that were within .80 ounces of exact weight. The charges were brought to exact weights by either adding or removing the necessary amount of the potassium sulphate and black-powder mixture.

As of August 1, 1945, the increment packaging schedule was transferred to the Radford Ordnance Works. On August 15, 1945, the packaging of M2A1 increments was stopped with the completion of Lot-Radford 36701. On August 18, 1945, the packaging of M3A1 increments was stopped with the completion of Lot-Radford 18144. No M1A1 increments were packaged during August. Also on August 18, 1945, the Increment Packaging Area was cleared, and most of the operators were terminated.

On July 26, 1945, the Igloo Area received sufficient conveyor to make a complete conveyor set-up at each Igloo from which powder was removed to supply the Loading lines. The amount of time required to supply the Loading lines with powder was reduced from an average of 6 to 3 hours after the conveyor set-up was placed in each Igloo containing powder for lines.

In the Smokeless Area, Line 4-A, operating on 105mm Howitzer, was closed down on August 10, 1945, and production on all 105mm Howitzer M2, M2A1, was stopped at the close of the 8-4 shift on August 15, 1945. On August 17 and 18 all 105mm Howitzer lines, 3-A, 3-B, 2-A, and 2-B, were cleared of powder and essential materials. These lines were then thoroughly cleaned and the entire

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buildings were washed down. All 105mm Howitzer operators were terminated on August 18, 1945. Line 1-B, operating on 155mm Howitzer, M4A1, was closed down at the end of the 8-4 shift on August 23, and the last 155mm Howitzer, M4A1 charges were loaded on Line 1-A August 24, 1945, at 10:50 A.M.. Both Lines 1-A and 1-B were completely cleaned and washed down on August 24. All of the hourly operators on the 155mm Howitzer were terminated at the end of the 8-4 shift on August 25, 1945.

The Bag Manufacturing Department stopped all operations on August 15, 1945, and all operating personnel, except seven were terminated.

The Black Powder Area also ceased operations as of 4:00 P.M., August 15, 1945, and all hourly personnel were terminated August 17, 1945.

3. Production Progress

The increases in individual production per eight-hour shift in the Bag Manufacturing Department and Bag Loading Department during the quarter are listed as follows:

Individual production per shift in the Bag Manufacturing Department increased from 103 to 112 complete bags on the 105mm Howitzer; increased from 45 to 51 complete bags on the 155mm Howitzer; and increased from 48 to 55 complete bags on flash reducers. Individual production per shift in the Bag Loading Department increased from 38 to 39 complete charges on the 105mm Howitzer; increased from 22 to 26 complete charges on the 155mm Howitzer; and increased from 29 to 31 complete charges on flash reducers.

For production progress, see Industry Integration Schedule No. 9, pages 15 through 16.

4. Troubles and Difficulties

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Considerable difficulty was again encountered in the Smokeless Area in July with the inert weight of bags being inconsistent on both the 105mm Howitzer and the 155mm Howitzer. This trouble caused delay in production until it could be satisfactorily established and checked by the Government Inspection Department.

The chain stitching on the square bags on the 105mm Howitzer gave trouble the entire month of July in the Smokeless Area. The Bag Manufacturing Department was using a 50/3 thread that appeared to be very weak. This was checked with the Bag Manufacturing Department, and it was found that the type of rollers used on the printing machine, in running the tubing through after it was sewed, was damaging the thread. This condition was corrected by changing the size of the thread, and the rollers were relieved where the thread and seams went through.

On July 12, 1945, trouble was encountered in the Smokeless Area with the No. 3 Charge of the 155mm Howitzer bag's being too large in diameter so they would not gauge. After checking this condition with the Bag Manufacturing Department, it was found that this was an error in the Cutting Room and was corrected immediately.

The quality of the M1 Flash Reducer containers which had been received were very poor, and therefore a 100% inspection on the Loading lines was necessary. As a result of a spot inspection made by the Hercules Inspection Department, it was estimated that only about 15% of these containers could be used. A request was submitted to the War Department seeking permission to use another-type container, and permission was received to use an M17 (stick powder) container.

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5. Inspection Problems and Practices

The inspection of incoming M-13 containers by the Smokeless Department was discontinued on July 16, 1945.

On July 21, 1945, the Smokeless Department instigated a definite inspection of all defects caused by the Sewing Room that were found on the Loading lines. A detailed record of the findings were kept, and a copy was sent daily to all interested parties.

The Bag Manufacturing Department was placed under direct inspection, using the line methods and percentages, during the month of August, 1945. However, at no time was any sub-lot rejected.

6. Industrial Safety

Captain W. P. Baker and Lieutenant G. V. Rouse, of the Safety and Security Division, Chicago, Illinois, made an audit of the plant from July 23, to July 30, 1945. A report of their findings and recommendations were made at a conference with the management at the close of the audit. Their comments were favorable. Lieutenant G. V. Rouse suggested that leather cushions be attached to the volumetric-machine lever arms and points on the frame that the lever strikes, in an effort to minimize the hazard of the black powder's igniting by impact. This suggestion was accepted and approved, and the matter was referred to the plant engineer.

There were no lost-time injuries at the New River Ordnance Plant during the months of July, August, and September, 1945.

HERCULES POWDER COMPANY

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PRODUCTION VS. SCHEDULE

July 31, 1945

RADFORD ORDNANCE WORKS
NEW RIVER ORDNANCE PLANT
PLANT 443 - SCHEDULE 9 FINAL
STANDARDS & PERFORMANCE MANUAL

Item No.	Nomenclature	House Shifts	Actual Capacity	Ordnance Schedule	Month to Date Plant Schedule	Month to Date-Actual Production	This Date-Actual Production
500200	Charge Propelling, 105 MM How., M2, M2A1, M4	5 (BL)	100.0%	550,000	550,000 (a)	550,324	15,436
1235	Charge, Prop., M4A1 (White Bag) for 155 MM How., M1	2 (BL)	100.0%	150,000	150,000 (b)	155,672	5,196
1585	Flash Reducer M1 for 155 MM Gun	4 (FR)	100.0%	90,000	90,000 (c)	92,790	3,780
13100	Flash Reducer T2 for 155 MM How.	0 (FR)	-	10,000	- (d)	10,000	-
12045	Flash Reducer T3 for 8" How.	0 (FR)	-	7,500	- (d)	7,500*	-
13010	Flash Reducer T4 for 105 MM How. M2	0 (FR)	-	20,000	- (d)	20,000	-

Operating House Comments

(1) Total Number of Smokeless Houses Operating

First Shift - 8 - (1 house operating on Rolled Powder Increment Packaging, 5 on 105 MM How., and 2 on 155 MM How.)

Second Shift - 0

Third Shift - 0

(2) Total Number of Smokeless Houses Not Operating

First Shift - 0

Second Shift - 8

Third Shift - 8

Number of Flash Reducer buildings operating: 4 on First Shift, 0 on Second Shift and 0 on Third Shift.

Number of Flash Reducer buildings not operating: 4 on First Shift, 8 on Second Shift and 8 on Third Shift.

Comments:

(a) 105 How. - Schedule complete.

(b) 155 How. - Schedule complete.

(c) Flash Reducer M1 for 155 MM Gun - Schedule complete

(d) Flash Reducer T2, T3, T4 - Schedule complete.

* Includes total repacked in new type of box.

Prepared by C.W.R. 8-1-45

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HERCULES POWDER COMPANY

R E S T R I C T E D

PRODUCTION VS. SCHEDULE

AUGUST 24, 1945

PRODUCTION AT THIS FACILITY TERMINATED ON THIS DATE

RADFORD ORDNANCE WORKS
NEW RIVER ORDNANCE PLANT
PLANT 443 - SCHEDULE 9 FINAL
STANDARDS & PERFORMANCE MANUAL

Item No.	Manufacture	House Shifts	Actual Capacity	Ordnance Schedule	Month to Date Plant Schedule	Month to Date-Actual Production	This Date-Actual Production
500200	Charge Propelling, 105 MM How., M2, M2A1, M4	0 (BL)	-	-	(a)	174,540	-0-
1235	Charge, Prop., M4A1 (White Bag) for 155 MM How., M1	2 (BL)	100.0%	-	(b)	88,167	584
1585	Flash Reducer M1 for 155 MM Gun	0 (FR)	-	-	(c)	59,380	-0-
10337	Flash Reducer T2 for 155 MM How. M1	0 (FR)	-	-	(d)	80,800	-0-
10338	Flash Reducer T3 for 8" How. M1	0 (FR)	-	-	(e)	34,950	-0-
10339	Flash Reducer T4 for 105 MM How. M2	0 (FR)	-	-	(f)	1,000	-0-

Operating House Comments(1) Total Number of Smokeless
Houses Operating

First Shift - 2 - (2 houses operating on 155 MM How.)

Second Shift - 0

Third Shift - 0

(2) Total Number of Smokeless
Houses Not Operating

First Shift - 6

Second Shift - 8

Third Shift - 8

Number of Flash Reducer buildings operating: 0 on First Shift, 0 on Second Shift and 0 on Third Shift.

Number of Flash Reducer buildings not operating: 8 on First Shift, 8 on Second Shift and 8 on Third Shift.

Comments:

- (a) 105 How. - Production ceased Aug. 15, 1945 - Schedule complete.
- (b) 155 How. - Production ceased Aug. 24, 1945 - Schedule complete.
- (c) Flash Reducer M1 for 155 MM Gun - Production ceased Aug. 15, 1945 - Schedule complete.
- (d) Flash Reducer T2 - Production ceased Aug. 17, 1945 - Schedule complete.
- (e) Flash Reducer T3 - Production ceased Aug. 15, 1945 - Schedule complete.
- (f) Flash Reducer T4 - Production ceased Aug. 17, 1945 - Schedule complete.